(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



- 1 MANA BINDON NI SERVE NEW KARIKATAN KARI KI DI MANA BANK KANIKATAN MANAKATAN KANIKATAN MANAKATAN KANIKATAN

(43) International Publication Date 16 December 2004 (16.12.2004)

PCT

(10) International Publication Number WO 2004/109983 A1

(51) International Patent Classification⁷: 12/46, 12/56, H04M 11/06

H04L 12/28,

(21) International Application Number:

PCT/NL2004/000406

(22) International Filing Date:

9 June 2004 (09.06.2004)

(25) Filing Language:

Dutch

(26) Publication Language:

English

(30) Priority Data: 1023631

10 June 2003 (10.06.2003) N

(71) Applicant (for all designated States except US): NED-ERLANDSE ORGANISATIE VOOR TOEGEPAST-NATUURWETENSCHAPPELIJK ONDERZOEK TNO [NL/NL]; Schoemakerstraat 97, NL-2628 VK Delft (NL).

(72) Inventors; and

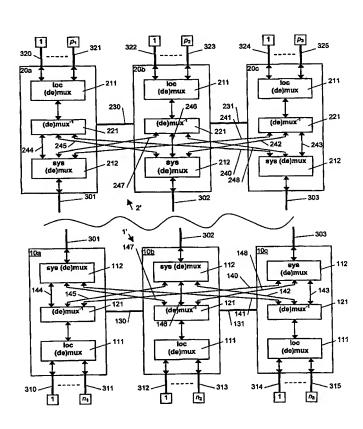
(75) Inventors/Applicants (for US only): LAARHUIS, Jan,

Herman [NL/NL]; Apollolaan 126, NL-7534 HG Enschede (NL). SWEERS, Bart-Jan [NL/NL]; Reggestraat 6, NL-2515 TL Den Haag (NL).

- (74) Agent: WINCKELS, J.H.F.; Nieuwe Parklaan 97, NL-2587 BN Den Haag (NL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: CONNECTING SYSTEM, INVERSE MULTIPLEXER, DATA COMMUNICATION NETWORK, METHOD AND COMPUTER PROGRAM



(57) Abstract: Throughput between nodes such as personal computer and a subnetwork such as the Internet is increased by using inverse multiplexing over multiple intersubnetwork connections such as local loop telephone lines of different users. The different nodes share the multiple intersubnetwork connections with each other, so that the efficiency of the use of the intersubnetwork connections is increased. Each of the nodes is capable of receiving and/or transmitting inverse -multiplexed data signals over the same plurality of intersubnetwork connections. Preferably, to this end, at each node, use is made of a separate connecting device which is, on the one side, locally coupled to the node and an intersubnetwork connection and is, on the other side, remotely coupled to one or more other such connecting devices. Such connecting devices are, for instance, placed in different housings, each with, for instance, a regular connection with a local computer and, for instance, a wireless transmission connection to corresponding connecting devices The interchanged in neighboring housings. data are inverse -multiplexed and transmitted via the intersubnetwork connections as inverse multiplex data.

WO 2004/109983 A1



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

with international search report